



X-Raying the Value Chain of Tricycle Business as a Means of Transportation and Its Impact on Poverty Within MUBI Metropolis, Adamawa State, Nigeria

Abalis Enam Pagiél

Department of Economics, Adamawa State University, Mubi, Adamawa State, Nigeria.

Ezekiel Elias Mijah

Department of Economics, Adamawa State University, Mubi, Adamawa State, Nigeria.

Panotani Asaph

Department of Economics, Adamawa State University, Mubi, Adamawa State, Nigeria.

Francis Michael

Department of Business Administration, Adamawa State University, Mubi, Adamawa State, Nigeria.

Elijah Hope Tumba

Department of Economics, Adamawa State University, Mubi, Adamawa State, Nigeria.

Date of Submission: 09-08-2024

Date of Acceptance: 21-08-2024

Abstract

This study examined the value chain of tricycle business and its impact on poverty alleviation in Mubi metropolis, which covers both Mubi North and Mubi South local government areas (LGAs) of Adamawa state, Nigeria. The study is designed on the bases of survey whereby cross-sectional data was collected across the active stakeholders in the Keke-NAPEP value chain within Mubi Metropolis. The main stakeholders identified were the tricycle riders, spare parts sellers, mechanics, ticket sellers, taskforce men, car wash where tricycles are being washed, liaison officers and the tricycle owners. Primary data was used in carrying out this investigation. The data collection process was done through the use of electronic device (Android Tablet) and an application called Kobol collect data kit. Descriptive statistics such as percentage table, measure of central of tendency (weighted mean value) and measure of dispersion were used to describe and analyze the data collected. The weighted mean approach was essentially designed to account for outliers and heterogeneity in the socio-economic attributes of the respondents which is one of the common problems of cross-sectional survey. The outcome of the study established that tricycle business (KEKE NAPEP) contributes significantly to the economic activities of the study areas in terms

of income generation, employment creation, wealth creation and indeed revenue generation to the government. It can therefore be concluded that the business contributes actively across the five components of the value chains identified and assessed since monthly income earned by all the actors are at least three times greater than the national minimum wage and all of them reported paying taxes to the government. Based on these findings, recommendations were made: government should pay more attention to the business since it is contributing to employment opportunities for mostly the youth, generating income and contributing to its revenue base by creating enabling environment such as good road networks and enhance operational security. This will further enforce investment in the transportation business. Again, since all the stakeholders in the five components of the value chain reported paying taxes to the government, there is need to create a friendly electronic platform for this tax collection going forward. This will reduce linkages associated with the tax officials not remitting the actual amount collected. Consequently, improving the revenue base of the government.



I. Introduction

Transportation plays a significant role in the socioeconomic development of every nation; it is essential in both rural and urban areas because it caters for the movement of people for different human activities. The more the population of a city increases, the more complex the transportation system and difficult to satisfy commuters, as the commuter begins to spend unnecessary longer time in their bid to commute to their destinations, while businesses suffer, school children get to school late, workers get late to work and several activities are paralyzed as a result of constant traffic gridlock. In recent times, the importance of tricycle as a means of transportation cannot be over emphasized due to the inefficiencies in the operation of the formal public transport services to meet the travel demand of fast-growing population (Jim, 2019), particularly the last mile travelers where their roads are inaccessible by corporate transportation system due to poor state of the road, thereby leaving tricycles as an only option if it is not a walking distance. The tricycle has been in operation in many countries as a means of public transportation, especially in Indonesia, Bangladesh, Thailand and Philippine (Agustin, 2018). In Philippine, mainly a tricycle is composed of a motorcycle fitted with a singled wheel sidecar or a unique motorcycle with two-wheel cabs to provide mobility needs for a fee (Guillen, 2004; Gullen& Ishida, 2004).

A tricycle has various names at different localities of the world. For example, in Accra, they are called Pragya, Qingqis in Pakistan, Rickshaw in India, etc. (Jing, 2019, Starkey et al, 2019). However, the acceptance of tricycle as a means of public transport is because commuters consider its safety, security, affordability, reliability, comfort and efficiency for their transport service choice (Litman, 2020). The acceptance of tricycle as an alternative mode of transportation in the developing countries, particularly in Nigeria arose due to its flexibility and door to door services for urban commuters.

The tricycle is known as 'KEKE NAPEP' in Nigeria. Its introduction was as a result of the stagnant economy, high cost of acquiring new and semi-used vehicles, weak transport system, and high unemployment rate as well as the need to empower a large number of idle youths to reduce poverty level in the society (Clement, 2022). 'KEKE' is a word in the Yoruba language in Nigeria, meaning bicycle. The evolution and development of KEKE as a mean of public transportation in Nigeria can be traced back to Brigadier General Mohammed Buba

Marwa (Rtd), the Military Governor of Lagos State between 1996 and 1999. He was the first to launch tricycle to be used as commercial transport in Lagos State and Nigeria. After the launched, the vehicles were called 'KEKE Marwa' (Mgbemena, 2013).

However, KEKE became popular across the nation due to the tricycle's adoption by the National Poverty Eradication Programme (NAPEP) of President Olusegun Obasanjo's administration to reduce poverty level and economically empower her citizens. Thus, KEKE NAPEP gained popularity across Nigeria (Mgbemena, 2013). This was the beginning of the widespread use of KEKE as a means of public transportation in other places like Kano, etc. Furthermore, the wide spread and acceptability of KEKE NAPEP in many cities of the North Eastern Nigeria happened following the enforcement and ban on commercial motorcycle operation known as Okada or Achaba by the government. This followed the problems of; insecurity, increasing fatal accidents and encouraging crimes and violation of laws and order. This embarked the usage and patronage in tricycle where they now charge between N100 to N200 per drop, which was affordable and much safer.

Mubi is one of the cities in Adamawa state where the use of commercial motorcycles known as Achaba was banned due to increasing incidence and cases of insecurity This ban on commercial motorcycles by the government left some youth jobless. Later, with the introduction and spread of tricycles, most youth in Mubi who were initially riding motorcycles as a means of livelihood quickly found another means of survival. Some persons who could not drive the tricycle by themselves but can afford to buy, took advantage of the business opportunities created by the introduction of KEKE NAPEP, they bought and give those who can drive, but could not afford. Such people receive returns in form of cash on daily basis. Other youths in Mubi engage in repairing some parts, some selling spear parts of tricycles, others opened a business of washing KEKE and existing car wash now include washing of KEKE NAPEP to the scope of their business. This has serves as a way of earning income as well as generating income to the youths, thereby reducing the current level of unemployment, improving standard of living and effective distribution of resources. The usage of tricycle has helped in the alleviation of poverty for many unemployed youths and also provides jobs for road side mechanics and vulcanizers. Tricycle ply both secondary and primary route in Mubi.

In spite of the significant importance of tricycle as a means for business and transportation



in Mubi, its operation constitutes serious health hazard because majority of the tricycle's engines are faulty thereby emitting carbon in our environment (Cooper, 2022). Traffic congestion and frequent accidents involving the tricycle and other road users, difficulty in financing the purchase of tricycle, high operation cost and meeting up with revenue generation daily by drivers, timelines, safety, the effects of the task force activities as well as the level of the experience of the operators are major impediment to achieve a sustainable urban mobility. Nevertheless, the introduction of KEK NAPEP as a means of transportation is believed to have impacted the lives of many peoples economically, including the suppliers, owners, operators, users, and mechanics. However, it is important to ask; has this alternative means of transportation solve the existing problem associated with the local economy, such as unemployment and poverty? Is there any improvement or increase in economic activities because of introduction of tricycle? This research, intend to find answers to these questions and seeks to identify how introduction of tricycles as means of transportation has impacted economic activities and reduction in poverty level in Mubi. It basically aimed at assessing the benefits associated with the tricycle business across the main value chain in terms of income generation, employment creation, revenue generation and improving the entire economic activities.

1.2 Statement of the Problem

The desire and commitment to tackle the deplorable high incidence of poverty prompted the Obasanjo's administration in another direction towards the introduction of effective and sustainable National Poverty Eradication Programme (NAPEP) under which there is the KEKE NAPEP programme. To effectively execute these mandates, NAPEP has programmed all relevant efforts and cluster of schemes mainly to ease identification, recording analysis and assessment. The multi-sectoral schemes have been condensed into the Youth Empowerment Scheme (YES) under which are these programmes: Capacity Acquisition Programme (CAP), Technical Entrepreneurial Development Programme (TEDP), Mandatory Attachment Programme (MAP), Credit Delivery Programme (CDP) and the KEKE NAPEP Programme. The programmes are implemented through the collaborative efforts of the Federal, States, Local Governments, Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs) and International Donors Agencies (IDAs).

The KEKE NAPEP business is one that has come to stay, employing a good number of unemployed people as drivers, spare part dealers/importers, ticket sellers, task force men and women, tricycle mechanics and liaison officers. It is pertinent at this point to state that, most of the KEKE drivers are not the direct owners of the tricycle, but hire purchasers of the tricycle; thereby forced by circumstance to save money for the repayment of the hire-purchase price and the method of saving was the informal type, as they hardly want a second to slip off them, so resort to the use of local mode of savings by those commonly known as contribution or Rotational Savings and Credit Schemes (RSCS). With the increase in the number of KEKE NAPEP business, so also vices have increased overnight. Hence, the intended poverty eradication scheme with its good intention thwarted by; hire purchase scheme which makes the drivers overdriving with work in order to meet up the payment schedules as the prices tripled since they did not buy the tricycles directly from the government, but from agents who stood up as middlemen, thereby making the price of the tricycle tripled. Others include: high fuel price as a result of buying at the roadside from middlemen, the scarcity of fuel with the attended high cost in price from the black market, poor government regulation, insufficient capital base, extortion of the drivers by the government officials and illiteracy of drivers in understanding traffic rules leading to incessant arrest and detention by law enforcement agents.

The above factors are inimical to poverty eradication, it therefore becomes difficult to clearly ascertain whether KEKE NAPEP actually alleviates or eradicate poverty, since its establishment was tended to eradicate or alleviate it. more so, as the business does not fully benefit the targeted population rather the middlemen who are not in most cases, the true beneficiaries. The current problem of insecurity, poverty and unemployment in the Nigerian economy especially in Mubi, Adamawa State is alarming. In which, youths contribute immensely to the situation or scenario, more especially; unemployed and the illiterates. It was in response to that the government formulated policies and programs such as the introduction of tricycles aiming at alleviating poverty. It is, therefore, against this backdrop that this study seeks to X-ray the value chain of tricycles and examine its impact on the poverty in Mubi metropolis

1.3 Objectives of the Study

The main objective of this study is to examine the value chain of tricycle business and its impact on



poverty in Mubi metropolis. The specific objectives however include to:

- i. Examine the nature and emergence of tricycle operation in Mubi metropolis
- ii. Identify and determine the value chain in tricycle business in Mubi.
- iii. Examine and ascertain the relationship between KEKE NAPEP and poverty alleviation in Mubi metropolis.
- iv. Examine how KEKE NAPEP business has contributed to income generation and poverty reduction in Mubi.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Clarification

The Concept of Poverty

In trying to understand the concept of poverty, the human elements involved can be depicted. They are popularly referred to as the poor. To this end Riddell and Robnsson (2020) classified them into three sub-groups: the chronically poor, the borderline poor, and the new poor. The chronically poor as they observed are those whose income levels remain continually below a given poverty-line, defined by minimum consumption standards: they suffer from acute deprivation. The borderline poor move in and out of poverty, often on a seasonal basis, according to the availability of food and work. A third group they highlighted includes those who are termed the new poor. They are those who were previously above the poverty line but have since joined the ranks of the poor as a result of economic recession or structural adjustment programs. In the same way, Otukpokpo and Otulukpe (2012) conceptualized poverty from absolute or relative terms. They said, absolute poverty denotes a condition in which a person or group of persons are unable to satisfy their most basic and elementary requirement of human survival in terms of good nutrition, clothing, shelter, transport, energy, education and recreation, while relative poverty occurs when an individual is underemployed. In another development, the term poverty, as defined by Geddes and Grosset (2020) is the condition of being poor. The state of existing in amount that is small. The Macmillan Encyclopedia described poverty as lack of goods and services necessary to maintain an adequate standard of living. According to Soubbotina (2021), poverty is pronounced deprivation of wellbeing. He succinctly explained that; traditionally poverty was understood primarily as deprivation, as living with low income and low consumption, characterized primarily by poor nutrition and poor living conditions. However,

it is easy to observe that income poverty in most cases is associated with so-called human poverty, the low health and education levels that are either the cause or the result of low income. Income and human poverty also tend to be accompanied by such social deprivations as high vulnerability to adverse events (for example, disease, economic crisis, or natural disaster), voicelessness in most of society's institutions, and powerlessness to improve one's living circumstances. This multidimensional nature of poverty is revealed by interviews with the poor themselves and confirmed by special sociological studies. The broader definition of poverty as a multidimensional phenomenon leads to clearer understanding of its causes and to a more comprehensive policy aimed at poverty reduction.

The Concept of KEKE NAPEP and Description

The desire and commitment to tackle the deplorable high incidence of poverty prompted the Obasanjo's administration in another direction towards the introduction of effective and sustainable National Poverty Eradication Programme (NAPEP) under which there is the KEKE NAPEP programme. To effectively execute these mandates, NAPEP has programmed all relevant efforts and cluster of schemes mainly to ease identification and recording analysis and assessment. The multi-sectoral schemes have been condensed into the Youth Empowerment Scheme (YES) under which are these programmes: Capacity Acquisition Programme (CAP), Technical Entrepreneurial Development Programme (TEDP), Mandatory Attachment Programme (MAP), Credit Delivery Programme (CDP) and the KEKE NAPEP Programme. The programmes are implemented through the collaborative efforts of the Federal, States, Local Governments, Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs) and International Donors Agencies (IDAs).

Abdussalam (2021), described KEKE as a commercial tricycle used for intra-city commuter transportation system in Nigeria. He noted that the reason of its birth is to assist the government to achieve its goal of eradicating poverty from the Nigerian society, particularly, among youths. This initiative was informed by the fact that the credit needs of the poor are largely ignored by the formal financial sector and the fact that these needs have not been adequately addressed by the earlier efforts as a large percentage of the poor youth population has not significantly benefited from such efforts (Kpakol, 2004).

It is observed that the project offers series of economic advantages to the operators. It has



powerful diesel engine and a fuel tank capacity of 10.5 liters, capacity of three to four passengers, payload capacity of 320kg, adequate room for passenger luggage, with top speed up to 80km per hour. KEKE is suitable for intra-city commuting and commercial passenger carriage, and has a low fuel consumption of 38km per litre.

According to Kpakol (2004), the introduction of KEKE NAPEP by President Obasanjo's administration in 1999 can be said to represent a strategy aimed at meeting the needs of the young and unemployed individuals within the society through the provision of KEKE tricycle in a sustainable manner as tool for self-employment.

2.2 Theoretical Framework (Keynes Theory of Effective Demand and Employment)

Generally, theories are scholar's perception on the impact and mutual relationship between different variables involved in the study. John Maynard Keynes economically conserved; every employment depends upon effective demand. For any rate of employment in transportation depends upon its effective demand as a need. Effective demand results in output, output creates income. Income provides employment. Keynes in his theory regarded employment as a function of income because of his assumption that all the four quantities above; effective demand (ED), output (O), Income (Y), and employment (E) are equal to each other.

$$ED = O = Y = E$$

This theory has been adopted and narrowed to transportation, because for any level of employment in the transportation sector, depends upon the level of the demands in the transport service. This shows that; employment depends on the demand of any variable. It is widely acknowledged that transport has a crucial role to play in economics development. More specifically, it has been recognized that the provision of a high-quality transport system is a necessary precondition for the full participation of remote communities in the benefits of national development: Adequate, reliable and economic transport is essential, although not in it self-sufficient, for the social and economic development of rural areas in developing countries. In general, interventions which reduce the transport burden by bringing basic services such as water supply and health clinics closer to the users, and affordable means of transport that are suitable to people and their daily work are more likely to reduce their transport burden.

2.3 Empirical Review

In view of the important of informal transport sector such as tricycle on economic development, especially in Nigeria, a number of empirical studies on the role of informal transportation in Nigeria have been carried out. The objective of this section is to review some of those studies as a guide to the choice of appropriate variable used in the study.

Mohammed and Cletus(2019), carried out study on the contributions of tricycle transportation business to the Growth of the local economy in Nigeria. The study used an approach which involves the collecting of both quantitative and qualitative data, integrating the two forms of data, and using distinct designs. The study discovered that; the introduction of tricycle transportation business has contributed to the economic growth of the local economy of Nigeria in several ways. Thus, the level of unemployment in the country has reduced as a result of the employment created from the tricycle transportation business. According to the study, there has been a reduction in the engagement in criminal activities such as stealing, taking hard drugs and other unaccepted behaviors. The study further revealed that the success stories of most businesses in the country are as a result of the introduction of tricycle transportation business. The study therefore concluded that the tricycle transportation business has contributed significantly to the growth of the local economy.

Mustapha,Akande and Jimoh (2017), in their study on the impact of poverty reduction program in kwara state, focused on the "Keke Maigida" (commercial tricycle). Data were collected from 112 beneficiaries, using a structured questionnaire. Questionnaires were distributed randomly (probability sampling method) in major Kwara commercial tricycles terminals in Ilorin metropolis. The study used descriptive statistics to analyze the data collected. It was found that there is significant impact in wealth creation to the riders. Muktar, Waziri, Abdulsalam and Dankani (2015) carried out a study on assessment of tricycle as a tool of poverty alleviation in Maiduguri, Bornu state, Nigeria. They used multi stage sampling techniques in collecting data and analyzed those using descriptive statistical tools. The findings revealed that male gender dominated the tricycle operation, while females only surfaced as owners of the tricycle. Further the study shows that KEKE NAPEP has helped in increasing economic activities, reduced poverty and increased income to the tricycle's operators in the state.



In his study on tricycles and poverty reduction in North-East Nigeria, Joel (2020) discovered that youths prefer the tricycle riding trades to any other form of skill acquisition or capacity building. Many do not know that; the operation of commercial tricycle transport system is a kind of money-spinning venture. Many pioneer operators told tales of huge sum generated from their daily business transactions, some even expressed regrets that they ought to have foregone paid employment in the first instance if they had earlier known about the miracle tricycle riding. It was also discovered that government also generates revenue from the operators. The study recommended that, as this system of transportation supplies food to so many tables of these unemployed youths in Nigeria, it becomes imperative for the government to intervene. Therefore, government should assist these unemployed youth by providing various tricycles to them, so as to alleviate and eradicate vicious circle of poverty. This will appreciably reduce level of unemployment and crimes in the cities.

In another study, Clement (2022), asserted that in spite of all kinds of abundant complement opportunities accorded to tricycle business and enhanced transportation system for goods and services, which the business has introduced, most traffic accidents are caused by tricycle riders, as they board sides of moving cars, and do not seem to have any knowledge of traffic regulations. A study carried out in Mubi by Jibrilla and Fashola (2017) on impact of tricycle operation on income of youths, provides additional insight into the nature of the tricycle business. The survey reveals that tricycle users in Mubi were generally male between 18 and 30 years of age and only 47 per cent of them had received formal education of any form. That means that 53 per cent of them were stark illiterates. This study is representative of most cities in Nigeria where tricycle business thrives.

III. Methodology

3.1 Description of Study Area

Mubi Metropolis comprises two Local Government Areas (LGAs) out of the twenty-one LGAs within Adamawa State. Namely, Mubi North and Mubi South. The metropolis is located between latitude 10° 05' and 10° 30' of the equator and longitude 13° 12' and 13° 19' E of the Greenwich meridian and has a land area of 4,728.77 km². The temperature regime in Mubi region is warm to hot throughout the year, because of high radiation income which is relatively evenly distributed throughout the year. However, there is usually a

slightly cool period between November and February; minimum temperature of 12.7°C around January and maximum temperature of 37°C around April. It is one of the urban areas in Nigeria that existed since the colonial era and has the second largest population in the state after Yola the State capital, with a population of 260,009 from the 2006 population census. However, the projected population of the metropolis stood at 372,305 in 2019 according to Adebayo et al., 2020 as cited in Elihu et al. (2023).

The area shares a boundary with Maiha L.G.A in the south, Hong L.G.A in the west, Michika L.G.A and Cameroon Republic in the east (Figure 2). The vegetation of Mubi and its environments fall within the Sudan savannah belt of Nigeria. The vegetation zone is referred to as cambretaceous woodland savannah. About 70% of the vegetation is grasses and weeds with few scattered woody plants which make up part of the natural vegetation and the exotic which were brought from other areas into the region. The growth of Mubi town is traced to the agricultural, administrative and commercial functions it performs. By 1902, Mubi was a German base from where the neighboring tribes such as Fali, Gude, Kilba, Higgi, Margi and Njanyiof of the region were subjugated. On 1st April 1960, Mubi was made the native authority headquarters. The same year, July 1960, the town became provincial headquarters of the defunct Sardauna province. In 1967, It was made L.G.A headquarters while in 1996, the town was splintered into two LGAs (Mubi-North and Mubi-South). Currently, the town is the seat of Mubi Emirate Council and is the headquarters of the Adamawa-North Location and Extent of Mubi Town According to Adebayo (2004),

Mubi is geographically well placed and functions not only as the centre of commerce in the region but also extends its sphere of influence to countries such as Cameroun, Central Africa Republic and Chad. Numerous banks, filling stations and hotels exist in the town to support the commercial activities. Another factor that led to growth of the town is rural-urban migration experienced from the surrounding villages. More over the town has become centre of learning with numerous tertiary and secondary institutions established in the metropolis such as the Federal Polytechnic, College of Health and Adamawa State University (Enoch, 2019).

3.2 Research Design

The research design for the proposed study is going to be a mix method of using evidence from



the literature that will inform the choice of appropriate quantitative and qualitative methods of collecting data from the field. In other words, triangulation method will be adopted as a standardized and comprehensive research design. The quantitative method of data collection will be achieved via the deployment of both structure and semi-structured questionnaires that will be administered across different households within the study location. The qualitative technique on the

other hand, will be achieved through Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) where by comprehensive interviews guides will be designed to achieve that. Indeed, critical stakeholders in the chain of tricycle business will be given priority while searching for the right persons to speak during both the FGDs and the KIIs sessions. Figure 2 provides a brief description of the research design.

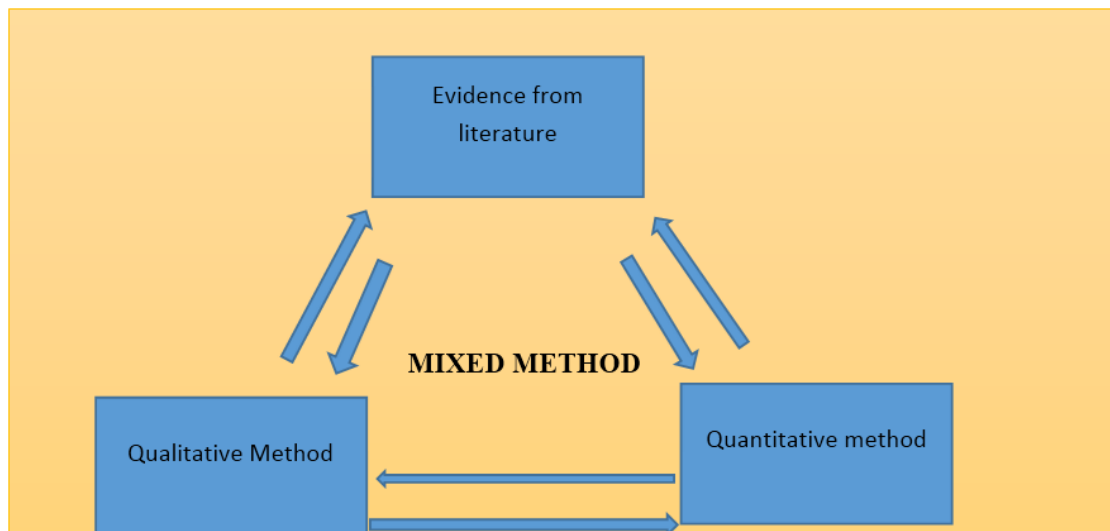


Figure 1: Summary of the Research Design

Source: Research Team Contribution

3.3 Source and Method of Data Collection

The data for the proposed study will purely be primary source that will be collected via certified and piloted structured questionnaire and FGDs/KIIs guides. The process will be achieved through the use of an Information and Communication Technology (ICT) platform known as the Open Data Kit (ODK) or Kobo collect. Smartphones or android table will be required as the major ICT devices that will assist in collecting the data. The choice for this method is predicated on the fact it has proven to be very effective and efficient in collecting high quality data within the shortest possible time and at minimal cost. It is also environmentally friendly, since none of the questionnaire will be printed. Indeed, one could also vouch for the integrity of the data because a lot of quality insurance measures are imbedded in the software. Lastly, it also simplifies the process of the data analysis since the back end of the data will be monitored by the research team as soon as the data collection process commences.

3.4 Population of the Study

The population of this study will comprise of all registered KEKE NAPEP in both Mubi North and South, vulcanizers, KEKE owners, KEKE mechanics, KEKE spear parts sellers and Car wash

3.5 Sample Size of the Study

Since research is a systematic process, the study adopts Dillman (2007 & 2011) formula which is an advancement of Krejcie and Morgan (1970) and is specified below as:

$$N_s = \frac{(N_p)(p)(1-p)}{(N_p-1)(B/C)^2 + (p)(1-p)} \dots \dots \dots (1)$$

Where:

NS = Computed Sample size needed for the desired level of precision;

Np = Size of the population of the study;

p = proportion of population expected to be sampled;

B = acceptable amount of sampling error (in this case assume +/-5 =0.05);

C = z-statistic associated with the confidence level (in this case assume a 95% confidence level =1.96).



A sample size of 980 was arrived at using the above formula to be administered on the two selected LGAs- namely, Mubi North and Mubi South with respective sample sizes of 638 and 342.

3.4 Sampling Technique

Since the study covers the metropolitan town of Mubi which has two LGAs, a total of four (4) wards each have been selected for the field survey within the metropolitan.

Furthermore, in order to achieve unbiased estimators, a multi-stage sampling technique was employed, but with specific interest to proportional stratified, cluster and systematic random sampling techniques which will be implemented in three stages.

In the first stage, the researcher will use purposeful and cluster sampling techniques whereby four wards have been proposed for each of the selected LGAs. The wards for Mubi North LGA include Sabon-Layi, Lokuwa, Yelwa and Wuro-gude/Sabon Gari. While as, Mubi south has Nassarawo, Kwacham, Gude and Kabang wards. These areas were carefully selected as the first four most densely populated wards in each of the LGAs within the metropolitan.

The second stage of the sampling technique considers the stake holders in the value chain of tricycle business. The study was designed on the basis of survey, whereby cross-sectional data will be collected across the active stakeholders in the KEKE-NAPEP value chain within Mubi Metropolis. The main stakeholders identified were the tricycle riders, spare parts sellers, mechanics, vulcanizers, car wash where KEKE NAPEP are being washed and the tricycle owners.

Certain socio-economic features such as income level of households, household size, the intensity of economic activities, household residential types and population density for the selection of the sampling areas using cluster and stratified sampling techniques will be adopted. That is, the questionnaires will be distributed in the proportion of 5:3:1 in low income/high density, medium income/medium density and high income/low density residential areas respectively.

The researcher, at the last stage of the sampling will apply systematic random sampling technique in the selection of number of each variable stake holder at 20th interval in low income/high density, 10th interval in medium income/medium density and 5th interval in high income/low density residential areas. The use of multi-stage sampling technique was adopted because due to its easy implementation and could

create a more representative sample of the population than the conventional single sampling technique. In other words, it is both cost and time efficient while retaining both the randomness and sufficient size of the sample, particularly in a general sampling frame like this. This sample technique is in tune with the recommendations of Maiyaki (2012) and Balian (1995).

3.6 Method of Data Analysis

The method of data analysis will be used at two stages. In the first stage, the researchers will utilize descriptive tools of analysis to summarize and deduce certain pieces of information from key variables of interest. Thus, measure of central tendency which include mean, median and mode will be computed so that information can easily be processed and analyzed. Additionally, the study will compute statistic on the degree of dispersion of the data using standard deviation (variance), minimum and maximum values. These statistics will enable the researcher to ascertain the extent of dispersion of information collected. Furthermore, shape of the distribution will be determined by computing skewness and kurtosis. Normality assumption of the data will be verified using these statistics since it is a cross sectional survey study that is vulnerable to heterogeneity and outlying data.

The second stage of the quantitative data analysis is the inferential analysis. Fundamentally, Factor Analysis (FA), specifically Principal Component Analysis (PCA) will be used to arrive at the principal variables influencing household daily water demand and supply by ranking them accordingly. Furthermore, Correlation Analysis (CA) will also be deployed in order to understand the extent of association among the variables that will be extracted from PCA which is significant in determining the degree of the influence of each of these variables with the help of their respective eigen value. logistic regression (Logit model) analysis as well as correlation analysis will be used to deduce inferential information from the data. Multiple regression model and logistic ordered model will be estimated.

4.1 Results, Discussion and Findings

A total of 385 respondents were sampled during the survey exercise. However, a total of 318 was representing a response rate of 82.59% was cleaned and analyzed for the study. The results presentation is done based on the four components or clusters of the Keke-NAPEP active players in the value chain, beginning with the description of



the socio-economic attributes of the respondents. In order to have a better understating of the key socio-

economic attributes of the respondents, table 1 provides the summary.

Table 1: Basic Socio-Economic Characteristics of the Respondents (keke-NAPEP Rider)

Gender of Respondents	Frequency	Percentage (%)	Cumulative
Male	181	100	100
Female	00	0	100
Total	181	0	
Marital Status	Frequency	Percentage (%)	Cumulative
Married	79	48.41	43.41
Single	95	52.80	92.35
Divorce	5	2.93	96.21
Widowers	3	1.63	100
Total	181	100	
Educational Qualification	Frequency	Percentage (%)	Cumulative
Post Graduate	1	0.55	0.55
Degree	10	5.49	6.0
Diploma/NCE	16	26.27	32.27
SSCE	82	45.05	57.22
First School Leaving Certificate	08	5.40	82.62
Islamic Education	21	13.19	96.11
No formal Education	10	3.89	100
Total	182	100	
Ownership Status	Frequency	Percentage (%)	Cumulative
Not the sole Owner	119	65.75	65.93
Main Owner	62	34.46	100
Total	182	100	
Number of Riders	Frequency	Percentage (%)	Cumulative
More than one Rider	102	56.04	56.04
Single Rider	80	43.96	100
Total	182	100	

Source: Outcome of Field Survey July, 2024

A careful examination of table 1 above indicates that all the respondents sampled as keke-NAPEP riders were 100% male (181). This reflects the real situation of the study areas because there are no single women ridding commercial tricycle within Mubi Metropolis. Furthermore, their marital status suggests that majority (52.20%) of them are still single. However, about 43.41% reported that they are married and still living with their spouses.

Their educational qualification indicates that most of them (45.05%) have completed their secondary education. It is also interested to note persons with Post Graduate and degrees (6%) were also identified to be among the riders. While establishing the ownership status of the tricycle riders, it was established that 65.75% of them do

not own them, but hired them from the main owners. While as, 34.25% affirmed being the owners of the tricycle they were riding for commercial purpose.

Lastly, it was established that 56.04% (102) reported having more than one rider per tricycle. This by implication implies with the total number of 11,867 registered tricycle as confirmed by the association of keke-NAPEP riders in Mubi metropolis, this has generated direct employment opportunities for about 18,517 persons whom mostly are youth. In other to ascertain the level of income earned and tax paid to government by the tricycle riders within the study area, table 2 provides the weighted average income estimated as reported.



Table 2: - Summary of Income Earned by Tricycle Riders/Government

Variable	Observation	Mean	Standard Deviation.	Minimum	Maximum
Household Size	182	7.423077	5.186267	1	35
Years of Experience	182	3.539835	2.691837	0	17
Daily Working	182	8.741758	2.754065	3	12
Cost of Fuel	183	2510.383	920.1955	0	5000
Cost of Maintenance	183	6596.224	7720.401	0	65000
Daily Tax paid to the Govt.	183	97.54098	227.4995	0	300
Weekly Tax	183	617.2131	654.5566	0	6000
Weekly Remittance	182	18510.73	12216.32	0	100000
Monthly Income Earned	183	88447.65	110546.1	0	1400000
Pay Back Period	179	1.798883	2.199029	0	18
Losses Incurred	182	27293.96	105916.6	0	950000

Source: Outcome of Field Survey July, 2024

Findings from table 2 above shows that the respondents have an average of seven (7) persons per household which a little less than the national average of eight (8), It was also established that the tricycle riders made an average monthly net income of about N88,500 which provides them with an average daily net income of approximately N3,000 after deducting the cost of fuel, maintenance and remittance to the tricycle owners. This is almost three (3) time the national monthly minimum wage of ₦ 30,000.

Inherently, they all reported paying an average daily tax of approximately ₦100 to the government and with the total number of 11,867 registered tricycles within the study, this implies that the government has the possibility of generating an

average daily revenue of N1, 167,700 each day. The government could generate average monthly income of **N35,601,000** if proper enforcement is in place.

Furthermore, revelation from table 2 above points to the fact that owners of tricycle received an average weekly income of N18,500 as remittance from the tricycle riders. Their investment on a tricycle has an estimated payback period of 1 year, seven months if there are no losses attributed to accident, default from the riders and extreme weather situation such as excessive rainfall.

Table 3 provides the estimated income accrued to the tricycle owners in the value chain of the business.

Table 3: - Estimated Profits Accrued to the Tricycle Owners

Variable Name	Observations	Mean	Std. Dev.	Minimum	Maximum
Age of Respondents	17	38.29412	7.800358	23	53
House Size	17	5.705882	1.490164	3	9
Years of Experience	17	7.647059	5.968052	2	23
Number of Employees	17	13.23529	16.69405	2	60
Initial Capital Invested	17	2151176	3871718	70000	1.65e+07
Numbers of Tricycle Owned	17	13.52941	16.54584	1	60
Cost of Purchase Per Unit	17	2.07e+07	2.94e+07	850000	9.90e+07
Cost of Maintenance	17	74294.65	149110	0	500000
Daily Income	17	5430.588	2555.087	2500	9500
Weekly Income	17	47941.18	55269.19	17500	252000
Pay Back Period on Invt.	17	1.647059	.4925922	1	2
Tax Paid Government	16	5343.75	17323.47	0	70000
Losses Incurred	11	272818.2	366984.1	15000	1000000

Source: Outcome of Field Survey July, 2024



Table 3 above provides the benefits of the tricycle value chain to the owners. A brief background to some of their socio-economic attributes shows that their mean age is 35 years within the youngest being age 23 and the oldest being aged 53. House size revealed that they have approximately 6 members. They have also been into the business for an average of 8 years.

In terms of employment generation attributed to their investment in the tricycle business, it was established an average tricycle owner generate employment opportunities for 13 people with at least person being employed as minimum and 60 people being employed by an owner at maximum. The result also suggests that average numbers of tricycle owned by an individual was 14 with the minimum of 1 and maximum of 60. Initial cost of investment as

reported by the owners was ₦ 2,151,175 and the current cost of a tricycle was reported to be ₦ 2,070,400. The business provides them with an average net daily and weekly income of ₦ 5,430 and ₦ 47,941 respectively. Indeed, this has the possibility of generating at least ₦ 125,000 monthly income per tricycle. The payback period of investing in buying a tricycle was reported to be 1 year, 6 months. This is also consistent with what was reported by the riders.

Lastly, an average tricycle owner contributes an average of 5,340 yearly to the government in the forms of tax.

Another important stakeholder in the tricycle value chain are the spare parts sellers/dealers. The outcome of data collected from them have been analysed and presented on table 4 below.

Table: 4 - Outcome of the Benefits of Tricycle Business to the Spare Parts Sellers

Variable Name	Observations	Mean	Std. Dev.	Minimum	Maximum
Age of Respondent	36	35.52778	8.520517	18	53
Household Size	33	7	2.704163	3	15
Years of Experience	32	5.84375	5.087045	2	22
Initial Capital on Investment	31	4635065	1.01e+07	17000	5.00e+07
Salary/Wages to Employees	31	7974.194	11728.63	200	35000
Total Salary	30	49100	111191.5	1000	600000
Total Tax paid to Govt.	28	5007.14	19663.88	200	100000
Daily Income	31	55064.52	50975.77	4000	150000
Monthly Income	31	1615452	1651598	15000	4500000
Total Losses Incurred	20	345650	1331307	0	6000000

Source: Outcome of Field Survey July, 2024

Findings from table 4 above shows that respondents in the spare parts value chain of tricycle have average age of 36 years with the youngest and oldest being 18 and 53 years respectively all are within the range of the active labour force. The house size is consistent (7) with the national average of eight (8). They have also reported to be having an average of six (6) years' experience in the spare parts business where they reported an average sum of ₦4, 635,065 as their initial capital investment into the business.

They also attested to the fact that they employed labour and pay them an average weekly salary of about ₦ 6,000 with lowest being N2,000 and the maximum amount being N35,000. An

average of N55,065 was estimated to be their daily income on the business translating into about N1,015,545 monthly income. They also attested to paying an average of N5,000 as tax to the government.

In spite of the of the benefits associated to the business, yet they reported incurring an estimated average annual loss of ₦ 345, 650 in the forms of bad debt, and loss of items.

Lastly, another important component to the tricycle value chain is the mechanic who are in charge of repairs and routine maintenance of the vehicle. Hence, table 5 provides the estimated benefits of the business to them.



Table 5: - Tricycle Business Benefits to the Mechanics

Variable Name	Observation	Mean	Std Dev.	Minimum	Maximum
Age of Respondent	23	29.743	6.7163	18	42
House Hold Size	23	5.782	2.5216	2	11
Years of Experience in the Buz.	23	3.310	1.9992	2	12
Numbers of Employees	18	2.731	1.3636	1	6
Initial Capital Invested	17	159,529.4	173266.1	29850	600,000
Salary/Wage	14	7695	41752.27	400	450000
Tax Paid to Government	15	3334.336	2532.47	400	14,000
Total Salary and wage	15	26220	41703.27	17500	135000
Daily Numbers of Tricycle Repair	20	6335.35	4.0655	1,500	27,000
Monthly Income	20	102700	57674.51	10,000	250000

Source: Outcome of Field Survey July, 2024

A careful assessment of table 5 revealed that the average age of persons who are mechanics of tricycle within the study area is approximately 30 with the youngest and the oldest being 18 and 42 years respectively which is still within the labour force range. It was also established most of them have about three (3) years of experience in the business and are currently employing about 3 persons.

The initial capital base of establishing a mechanical shop was reported to be ₦159,530 with the minimum and maximum amounts of ₦ 29,990 and ₦ 600,000. This generates an average daily income of 6,325 with the minimum income of ₦ 1,500 and the maximum of ₦ 27,000. They also reported paying tax of ₦ 3,330 annually to the government.

Conclusion of the Study

The study on X-raying the tricycle Business value chain within Mubi metropolis has been able to established that it contributes significantly to the economic activities of the study areas in terms of income generation, employment creation, wealth creation and indeed revenue generation to the government. It can therefore be concluded that the business contributes actively across the five components of the value chains identified and assessed since monthly income earned by all the actors are at least three times greater than the national minimum wage and all of the them reported paying taxes to the government.

Recommendations of the study

Drawing from the above findings of the study, the following recommendations are made:

(i) Government should pay more attention to the business since it is contributing to employment opportunities for mostly the youth, generating income and contributing to its revenue base by

creating enabling environment such as good road networks and enhance operational security. This will further enforce investment in the transportation business.

(ii) There is also need for proper registrations and profiling of all the stakeholders on the tricycles value chain so that more information with respect to income earned, losses incurred and taxes paid could be accounted for into the local, state and indeed national Gross Domestic Product (GDP).

(iii) Since all the stakeholders in the five components of the value chain reported paying taxes to the government, there is need to create a friendly electronic platform for this tax collection going forward. This will reduce linkages associated with the tax officials not remitting the actual amount collected. Consequently, improving the revenue base of the government.

(iv) There is need to encourage local production of tricycles within the country in order to optimize the value chain.

ACKNOWLEDGEMENT

This is to acknowledge the financial support of the Tertiary Education Trust Fund (TETFund) which is done via the Institutional Based Research (IBR) grant with grant number **TEFT/DR&D/UNI/MUBI/RG/2024/VOL.1**. The team also thank the Adamawa State University, Mubi and the Research and Innovation Directorate for their assistance.

REFERENCES

- [1]. Agustin, C. P, Costales, N. C., Gadingan, M. M, Francisco, L. M. &Frona, E. P. (2018).
- [2]. The functionality of the Tricycle regulation unit of Tuguegarao City, International Journal of Advanced Research in Management and Social Sciences, 7(3):211-236.



- [3]. Alkim, A. I., &Kusin, N. (2022). Poverty, economic growth and human research development in Nigeria: Autoregressive Distributed Lag (ARDL) Approach. *CBN Journal of Applied Statistics*, 6(1), 69-93.
- [4]. Balian, S. (1995). "Conflicts and dilemmas of Poverty". *The World Bank Research Observer*, 10(2), 229-236.
- [5]. Binus, A. & Bobbie H. (1970). Localization and corruption: Panaceas or Pandora's box? *World Bank Policy Research Working Paper*, 3486.
- [6]. Clement, B.A. (2022). Appraisal of tricycle as a poverty alleviation strategy in Nigeria: an example of Lagos Metropolis. *Ethiopian Journal of Environmental Studies & Management*, 8(1):81-96.
- [7]. Cooper, L. N. (2022). Implications of Trycle as a means of transport system in rural areas of Adamawa state. *International Journal of Humanities* 2(9), 33-45.
- [8]. Danyaki, K. (2022). Towards an optimal transportation system in Nigeria. *The Nigerian Journal of Development Studies*. 1(2), 104-109.
- [9]. Dillman, Don A. (2007). *Mail and Internet Surveys: The Tailored Design*, Second Edition—2007.
- [10]. Update. John Wiley: Hoboken, NJ. 565 pp. ISBN: 0-470-03856-x. 523 pp.
- [11]. Dillman, D. (2022). Poverty and public employment: A theory with evidence from Germany. *World Politics*, 54(2), 145-183.
- [12]. Dosunmu, V. A., Ajiboye, A.O., Ayantoyinbo, B. B. &Olaogun, O. B. (2006). An overview of the socio-economic dynamics of the paratransit mode in developing economies. *The Interface: A Biannual Journal of Management*, 2(2):1-14.
- [13]. Elson, N. (2020). Transportation and macroeconomic performance in Kenya: *Journal of Development Economics*, 8(2), 153-174.
- [14]. Gregory, R. G. & Borland, J. (1999). Recent development in public sector labour markets. *Hand Book of Labour Economics*, III. Amsterdam, New York.
- [15]. Guillen, M. D. (2004). A study on the development of local public transport policy: The case of Tricycles and "Habal-Habal" in Davao City, Philippines. A Master of Policy and Planning Sciences thesis, submitted to the Graduate School of Systems and Information Engineering, University of Tsukuba, Philippine.
- [16]. Guillen, M. D. and Ishida, H (2004). Motorcycle-propelled public transport and local policy development: The case of Tricycles and "Habal-Habal" in Davao City, Philippine. *IATSS Research*, 28(1):56-66.
- [17]. Jibrilla, H. M. & Fashola, O. M., (2017). International Digital Organization for Scientific Research, *IDOSR Journal of Humanities and Social Sciences* 2(3):56-72.
- [18]. Jim, Y. (2019), The impact of Tricycles on transportation and economic activities in Ghana: A case study of the Ho Municipality, *International Journal of Economics, Commerce and Management*, United Kingdom. 7(12): 633.
- [19]. Joel, Y. (2000). Regional Transportation and fiscal incentives. *International Journal of Social Sciences and Humanities*. 12(5), 33-45.
- [20]. Kpakol, K. N., (2009). Impact of local decentralization on economic growth: evidence from U.S countries. *IZA Discussion Paper*, 4574, November, 2009.
- [21]. Litman, T. (2020). Evaluating accessibility for transportation planning: Measuring people's ability to reach desired goods and activities. *Victoria Transport Policy Institute*, June 5, 2020.
- [22]. Mgbemena, J. (2013). Language, communication on wheels and national development: The inscriptions on tricycle (Keke). *International Journal of English and Literature*, 4(10):529-537.
- [23]. Mohammed, G. & Duke, J., (2016). Transportation. *A Review Journal of Economic Surveys*, 15(1), 71-121.
- [24]. Mukhtar, A., Waziri, M. Abdulsalam, B. &Dankani D. P., (2015). Assessment of Tricycle as a tool of Poverty Alleviation in Maiduguri, Borno State, Northeast Nigeria, *IOSR journal of humanities and social science (IOSR-JHSS)*, 2(8):14-18.
- [25]. Mustapha A.M, Akande Y. B., &Jimoh, S.C., (2017)Determining Economic Sustainability of Nigerian National Transport Policy. *African Journal of Business Management*. 5(8), 3139-3147,
- [26]. Riddel, K. F. &Robbinson D., (2020). Impact of local transport system on poverty in Nigeria, *International Journal of Science and Research (IJSR)*. 5(9):83-86.
- [27]. Starkey, P, Batool, Z, & Younis, M. W. (2019). The expansion of three-wheelers transport service: The case of Qingqis in



- Pakistan, A paper presented at the 26th World Road Congress.
- [28]. Skambo L. (2019). Rural transportation and market performance: public sector employment, rent seeking and economic growth. *The Economic Journal*, 101(408), 1186-1199